
ANALYSIS

Edited by
BERNARD MAYO
with the advice of

A. J. Ayer

R. B. Braithwaite

Herbert Dingle

A. E. Duncan-Jones

P. T. Geach

C. A. Mace

A. M. MacIver

H. H. Price

THE UNIVERSITY
OF MICHIGAN

APR 12 1960

PERIODICAL
READING ROOM

CONTENTS

Making Things to Have Happened

RODERICK M. CHISHOLM and RICHARD TAYLOR

Taylor and Chisholm on Making Things to Have Happened

WILLIAM DRAY

"Nothing Can be Heard but Sound"

JOSEPH MARGOLIS

Professor Hanson Imagining the Impossible

ROY J. COX

On Mr. Sørensen's Analysis of "To Be" and "To Be True"

YEHOSHUA BAR-HILLEL

THREE SHILLINGS AND SIXPENCE NET

ASILEY BLACKWELL · BROAD STREET · OXFORD

AN

IT
Ip
pre
arg

no

and

from
need
for

con
od
suf
log
tw
for
liv
con
no
cas

im
car

wh
to

vari
pap
Ar
AN
gen
AN
of 1
AN

MAKING THINGS TO HAVE HAPPENED

By RODERICK M. CHISHOLM and RICHARD TAYLOR

IT is not our purpose to add to the voluminous arguments¹ purporting to prove, or to refute, the claim that effects might precede their causes, but to show that the commonest type of argument given against that view is inconclusive.

We define the concept of *sufficiency* in terms of an undefined notion of *impossibility* by saying:

"A is sufficient for B" means: (A and \sim B) is impossible, and we define *necessity* in terms of the same notion by saying:

"A is necessary for B" means: (\sim A and B) is impossible,

from which it follows that if A is sufficient for B, then B is necessary for A, and if A is necessary for B, then B is sufficient for A.

The unanalyzed impossibility in terms of which these concepts are defined can be either logical, or what is sometimes oddly called "physical". Thus, a thing's being a cube is sufficient for its having twelve edges, in the sense that it is logically impossible for it to be a cube and have more or less than twelve edges. Similarly, a man's being beheaded is sufficient for his dying, since it is impossible for him to be beheaded and live, just as it is impossible that petrol-soaked rags brought into contact with fire under certain specifiable conditions should not ignite; but no logical impossibilities are involved in such cases.

We are concerned only with the latter, non-logical sense of impossibility. And for our purposes, the relation of causation can be defined as follows, in terms of sufficiency:

"A causes B" means: A is sufficient for B,

wherein A and B designate conditions that are assumed actually to occur at some time.

¹ The general question whether effects can precede their causes has been discussed from various viewpoints and sometimes with highly imaginative examples in the following papers: M. Dummett and A. Flew, "Can an Effect Precede its Cause?" (symposium), *Arist. Soc.*, suppl. vol. 28 (1954); M. Black, "Why Cannot an Effect Precede its Cause?" *ANALYSIS*, vol. 16 (1956); A. Flew, "Effects Before Their Causes? Addenda and Corrigenda", *ANALYSIS*, vol. 16 (1956); M. Scriven, "Randomness and the Causal Order", *ANALYSIS*, vol. 17 (1956); A. J. Ayer, "Why Cannot Cause Succeed Effect?" pp. 170-175 of *The Problem of Knowledge*, Penguin Books, 1956; D. F. Pears, "The Priority of Causes", *ANALYSIS*, vol. 17 (1957); A. Flew, "Causal Disorder Again", *ANALYSIS*, vol. 17 (1957).

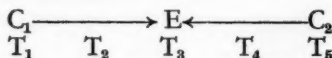
Neither A nor B needs to designate a single condition or event, for the cause of any event is almost invariably a *set* of these. Thus, it is elliptical to say of a burning match that striking it caused it to light, for it is not impossible that it should have been struck without lighting—in case it had been wet, for instance. But there is a finite set of conditions among all those that occurred, which was sufficient for its lighting, in the sense of sufficiency defined; for example, some such set as (i) its being dry, (ii) its being struck, (iii) its being of such and such composition, (iv) the pressure on it being such and such, (v) the striking surface being of such and such character . . . and so on. And it is this set of conditions which, being sufficient for a certain effect, *causes* that effect.

Now surely there is nothing in the causal relation, other than this relation of sufficiency. In order to get a match lighted, we need only establish some set of conditions sufficient for its lighting; we do not need, in addition to this, to establish another condition having the "power" or whatnot to "produce" the desired effect. The effect is guaranteed simply by the occurrence of such conditions as are sufficient for it.

As a matter of vocabulary, however, people do not ordinarily call any condition or set of these a "cause" of anything else unless it is also *prior* to it in time. But this seems to be merely a point of vocabulary. Obviously, we could modify our definition by *stipulating* that A must precede B in order to count as a cause of B, thus guaranteeing the priority of causes by definition—just as someone could as easily stipulate that A must *follow* B in order to count as a cause of B. But our point is that if we do not thus secure the principle by stipulation, if we do not add on some such clause as "A precedes B in time" to our definition, then there seems to be no reason for supposing that causes must precede their effects.

We can, to be sure, "make things happen" by producing antecedent conditions sufficient for their happening, thus using causes as "levers" for controlling the future, and there is no doubt that we do tend to think of causes in this way. But, it now turns out, we can apparently in the same sense "make things to have happened" in the past, so this consideration has no significance.

Assume the following situation:



T_1, T_2 , etc., are successive times, T_1 being the earliest. C_1 is a set of conditions sufficient, but not necessary, for an event, E , and E is in turn necessary, but not sufficient, for another set of conditions, C_2 . It follows, that C_1 and C_2 are alike sufficient, though neither is necessary, for E , this relation being indicated by the two arrows.

To represent this sort of situation imaginatively but in a much over-simplified way, we might suppose that Smith's drinking poison (C_1) is sufficient for his dying (E), which is in turn necessary for Jones' being elected to office (C_2)—but, we assume, C_1 is not necessary for E , nor is E sufficient for C_2 .¹

Now what reasons can be given for regarding C_1 , but not C_2 , as being responsible for E ? Why, that is, should anyone say that it was Smith's drinking poison that was responsible for his dying, but that Jones' being elected had nothing to do with it, when both events are alike sufficient for that event, i.e., when the occurrence of either of them is enough to ensure Smith's dying? The temptation is to say that it is because C_2 did not occur until *after* E had already happened. But we want now to show how irrelevant that is, by considering the various arguments that might be offered in favour of it.

First argument. We can, at T_1 , bring about the occurrence of C_1 , thus ensuring the occurrence of E later on. But we cannot, at T_5 , bring about the occurrence of C_2 , thus ensuring the prior occurrence of E at T_3 —for T_3 will then be past, and E either will, or will not, have happened, regardless of C_2 . To suppose otherwise, would be to suppose that we have some sort of control over what is past.

Reply. E either does, or does not, happen at T_3 . Now if we assume that E does not happen, then it is false that we can bring about the occurrence of C_1 —because E is a necessary (though subsequent) condition of C_1 . Only, then, if we assume that E does happen is it true to say that we can bring about C_1 .

But similarly, E either does, or does not, happen at T_3 . If we assume that E does not happen, then it is indeed false that we can bring about the occurrence of C_2 —because E is a necessary (antecedent) condition of C_2 . But if E does happen, then we no longer have any reason for asserting that we cannot, at T_5 , bring about the occurrence of C_2 .

¹ This example is grossly over-simplified in view of what was said before. A complete description would require us to say that C_1 is, together with such other conditions as exist between T_1 and T_3 , sufficient (though not necessary) for E , but that these, without C_1 , are not sufficient for E , and that C_2 is, together with such other conditions as exist between T_3 and T_5 , sufficient (though not necessary) for E , but again that these, without C_2 , are not sufficient for E .

Now it is tempting to say, that whether E happens or not depends on whether C_1 occurs. But it equally depends on whether C_2 occurs—for we can guarantee the occurrence of E by bringing about C_2 , just as surely as by bringing about C_1 .

As for the thought that by the time T_2 arrives, T_3 will already be past, and E either will or will not have then happened, regardless of C_2 , we can equally say that at T_1 , T_3 will be as yet future, and E either will or will not then happen, regardless of C_1 .

Now it is true that, under the conditions we have assumed, E does not occur "regardless of C_1 ", for C_1 is obviously responsible for the occurrence of E, that is, is sufficient for it. But it is no less obvious that C_2 is responsible for E—for it, too, is sufficient for it.

If, accordingly, this first argument is thought to prove that no cause can follow its effect, the reply to it seems to show, with as much or as little force, that a cause cannot precede its effect. And this is absurd.

Second argument.—We can find a situation in which E has already happened, and then (since E is not sufficient for C_2) we can arrange for C_2 not to happen. This shows that C_2 cannot be regarded as being responsible for E—for an event which does not occur, or which can be prevented from occurring, cannot be regarded as causing one that does.

Reply.—In any sense in which this second argument is correct, the following appears to be correct too: We can find a situation in which E is going to happen,¹ and then arrange for C_1 not to happen. This indicates that C_1 cannot be regarded as the cause of E—for an event that does not occur, or which can be prevented from occurring, cannot be regarded as causing one that does.

If, accordingly, this second argument is thought to show that no cause can follow its effect, the reply seems equally to show that a cause cannot precede its effect, which is, again, absurd.

Third argument.—"Arranging for something not to happen" means doing something, which is sufficient for that event not happening. The second argument therefore means, that we can do something, X, at (say) T_4 , such that X is sufficient for the non-occurrence of C_2 . And it seems that we can thus do something to prevent C_2 —for instance, we can poison Jones, in time to prevent him from being elected.

Reply.—Either C_2 will occur at T_5 , or it will not. Now if C_2

¹ The question, how we would know that E was going to happen, is of course irrelevant.

will occur at T_5 , then it is false that we can do X at T_4 —because the non-occurrence of C_2 is a necessary condition for the occurrence of X. Only, then, if C_2 is not going to occur at T_5 , can we do X at T_4 .

Moreover, in any sense in which we *can* do X at T_4 , thus preventing C_2 , we can also do something, Y, at (say) T_2 , thus postventing C_1 —for instance, we can go and find Smith healthy and free from all poisons. For we can surely say, that C_1 either did occur at T_1 , or it did not. If C_1 did occur at T_1 , then it is indeed false that we can do Y at T_2 . But if C_1 did not then occur, there is no reason to deny that we can do Y.

Hence, it seems that in any sense in which we *can* do X, and thus prevent C_2 , we also can do Y, and thus postvent C_1 ; and, in any sense in which we *cannot* do the latter, we apparently cannot do the former either.

Fourth Argument.—Let us suppose that “we can do X” has a hypothetical meaning, something like: we shall do X if we want to, but not unless we want to; and similarly, for “we can do Y”. Now in this sense it seems that we surely can do X, at T_4 , thus preventing C_2 —for it is presumably true that we shall do it if we want to. But we cannot in a similar fashion ensure that C_1 did not happen, *even* if we want to.

Reply.—The reply to this is in part similar to the others. Namely, if we suppose that C_1 has already happened, it is indeed false that we can do Y, for we shall not be able to do Y, even if we want to. But similarly, on the supposition that C_2 is going to happen, it is likewise false that we can do X, for we shall not be able to do X, even if we want to. If, accordingly, we want to do X, presumably we shall—provided C_2 is not already going to happen.

Now one might be tempted to argue that we really could not do Y, because there is now at least one condition, viz., our having not done Y, which renders it impossible that we wanted to do Y, and hence impossible that we should have done it. But clearly, we can give the same kind of reason for saying that we really cannot do X either.

Or one might insist that it is still true that we *can* do X, in the hypothetical sense of “can” defined, even though certain conditions, known or unknown, should render it impossible that we shall want to do X, and hence impossible that we shall in fact do X. But in this same hypothetical sense, we can say that we can have done Y—even granting that it is impossible that we in fact did do Y.

Fifth argument.—But our present desires, intentions, decisions, etc., can *influence* our future actions, and thereby influence other things too, whereas our present desires (etc.) cannot influence our past actions, or any past event, these being now beyond our control.

Reply.—To say that our present desires (etc.) can *influence* our future actions, evidently means that they can, along with other conditions, be sufficient for those actions.

If, then, our present desires (etc.) could ever be sufficient for our past actions—i.e., if having a certain desire now is, together with other things, enough to ensure our acting in a certain way in the past—then in the sense in which such desires (etc.) influence our future actions, they might influence our past actions as well.

And in fact, the desires (etc.) we now have *are* very often sufficient for our acting in certain ways in the past—namely, in all those cases in which our past actions are necessary conditions for our present desires.

For example, suppose a student wants to go into the law, and this desire is, together with other things, sufficient for his so doing. Suppose further, though, that he would not have that desire, had he not visited courts of law in the past. This means, that his making such visits was necessary for his desiring as he does, and hence, that his subsequent desires are sufficient for his having made those visits.

In the sense in which his desire “influences” his subsequent action, then—viz., is, together with other things, sufficient for that action—so also does it “influence” his past actions.

Sixth argument.—But things future—viz., certain actions of ours, or arrangements for various things to happen or not to happen—are sometimes up to us, in the sense that it is up to us *whether* they happen or not. Things past, however, are no longer up to us, there being no longer anything we can do about their happening, or their not happening.

Comment.—This thought *seems* to embody something that is true. But if it does, then it would seem that the expression “it is up to us” conveys some idea that cannot be analyzed in terms of conditions necessary or sufficient for each other. It is exceedingly difficult to see what that idea might be.

Brown University

TAYLOR AND CHISHOLM ON MAKING THINGS TO HAVE HAPPENED

By WILLIAM DRAY

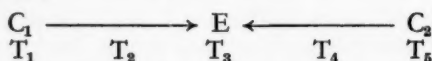
IN "Making Things to have Happened", Professors Richard Taylor and Roderick Chisholm argue persuasively that it is arbitrary to regard as causes only those events which precede their effects. That the events we ordinarily call causes do precede their effects, they consider "merely a point of vocabulary", by which they appear to mean that it is merely a fact about the causal judgments we do ordinarily make. Their argument is designed to show that no absurdity results from our breaking with what is essentially just a series of precedents, and saying, in some new case, that a later event caused an earlier one.

Now it seems to me that it *is* absurd to say that, if it is true that Jones cannot get elected in Smith's place unless Smith dies first, then I and my fellow electors can cause Smith to have died by electing Jones. Unless I have misunderstood the point, however, the reply of Taylor and Chisholm would be that if I find this absurd, it is only because I have incorporated "temporal priority" into my concept of causation—in the way that I might, for example, incorporate the fact that we do not call anything over ten feet tall "a man" into my concept of a male human being. Let me try to show why I think this reply is unsatisfactory.

Taylor and Chisholm equate "A is the cause of B" with "A is sufficient for B"; and they equate "A is sufficient for B" with "(A and ~B) is impossible", where "impossible" does not mean "logically impossible". Presumably this is not offered as an arbitrary, stipulative definition; for if it were, the whole argument would be trivial—a mere logical exercise. It seems reasonable to conclude, therefore, that Taylor and Chisholm think that this definition faithfully conveys what we do ordinarily mean by "cause", provided we rule out of it the bare notion of temporal priority. I shall concede that, if we accept both the proffered definition of "cause" and the definition of "sufficient", then it does follow that we can speak without absurdity—at any rate without making any logical error—of a later event causing an earlier one. But I should like to argue, at the same time, that the definition in question is further from the ordinary meaning of "cause" than these authors appear to think; and

that they do fall into absurdities at various stages of their argument because they do not sufficiently appreciate the difference between that meaning and the technical sense of "cause" which they so carefully define.

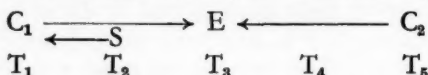
Taylor and Chisholm assume a situation where C_1 is an event which is sufficient, but not necessary, for a later event E , and where E is in turn necessary, but not sufficient, for a still later event C_2 . Since, if one event is sufficient for another, the latter is necessary for it, and if one event is necessary for another, the latter is sufficient for it, it follows that in the assumed situation, both C_1 and C_2 are sufficient for E . The situation is diagrammed thus:



Thus, if "cause of" is defined as "sufficient for", C_1 and C_2 are equally causes of E ; and no absurdity should result from my saying that my performing C_2 at T_5 causes E at T_3 .

But now let us ask whether, in using the term this way, Taylor and Chisholm are employing the ordinary concept of causation with only the notion of temporal priority left out. That they are not becomes clear if we ask whether, even in a *forward-pointing* case, the satisfaction of both the Taylor-Chisholm criterion of sufficiency and the criterion of temporal priority would invariably commit us to calling an event a cause, in the ordinary sense of the term. It seems to me that to say that it would, obliterates the distinction we draw between events which are *causes* of, and events which are merely *signs* of, other events.

This will be most obvious in cases where our reason for regarding the one event as a reliable sign of the other is that we judge both to be effects of a common cause, although not simultaneous effects; and where the earlier effect (which we may designate as "S") is necessary for the cause, C_1 , in the same way that C_2 is necessary for E . To represent such a situation, we should have to complicate the Taylor-Chisholm diagram thus:



An example of "S" might be the fall of a barometer, which is "sufficient" for the rain which it licenses us to expect—in the Taylor-Chisholm sense of "sufficient". Any objection that

such an event is not *really* sufficient for the effect indicated, or perhaps not sufficient *in itself*, should, it seems to me, be disregarded in this context of discussion. For Taylor and Chisholm, in commenting on the case of the struck match which failed to light, argue that the event called "sufficient" in ordinary examples really represents a very large, but finite, *set* of conditions—a complication which they propose to ignore. And we could, of course, say the same thing about "S": we must assume, for example, that the barometer is not tampered with. Provided this finite set of conditions obtains, then it is impossible, although not logically impossible, that C_1 should not have occurred. Indeed, if this contention is not accepted, the whole ground on which C_2 was called the cause of E would itself be destroyed.

But if we admit the legitimacy of the above diagram, it seems that we shall have to admit also that, besides "causing" C_1 (in the same way that C_2 is said to cause E), S also "causes" E, since it is impossible that S should occur without E following. Here we have a *forward-looking* case which satisfies the Taylor-Chisholm criterion of sufficiency, which would not ordinarily be judged to exhibit the relation of cause and effect. What this surely shows is that there is something more to the ordinary concept of causation than is found either in what the Taylor-Chisholm definition retains or in what it explicitly excludes.

It may perhaps be objected that we should not, in any case, ordinarily judge S to be sufficient for E, even when we add to it certain other members of a finite set (which does not include C_1). If that is so, it would seem to be so because, when we ordinarily talk about causes being sufficient for their effects, the term "sufficient" has a meaning different from the one given it by Taylor and Chisholm, when they equate "A is sufficient for B" with "(A and \sim B) is impossible". This stronger sense of "sufficient" would be difficult to explicate without using causal synonyms like "bring about", "produce" or "make". I do not claim to throw any light upon such a stronger sense of "sufficient". I merely point out that, having failed to recognize that there is such a sense, Taylor and Chisholm eventually employ language which suggests that a later event can be sufficient for an earlier one in this stronger sense, rather than in the weaker one they originally laid down.

Thus, in their first "Reply" to objections, they argue that provided E did happen at T_3 , we can later "cause" it to have happened in the sense of *bring it about*; and at other points they

speak of having shown that what we do can *influence* or be *responsible* for earlier events. If they remain true to their own definitions, the most they can legitimately say is that if we succeed in doing C_2 at T_5 , then it is impossible that E should not have occurred; and our claim that what we do "causes" E can mean no more than that. To say that we can "bring about" E's having happened is absurd, and it remains absurd in spite of the arguments presented. The absurdity, however, does not follow from their making a "causal" judgment in their own peculiar sense; it is something they slip into by not sticking consistently to that one peculiar sense.

University of Toronto

"NOTHING CAN BE HEARD BUT SOUND"

By JOSEPH MARGOLIS

THERE is a well-known passage in the first of Berkeley's *Dialogues* that brings into focus certain central questions concerning perception. Philonous remarks:

... when I hear a coach drive along the streets, immediately I perceive only the sound; but from the experience I have had that such a sound is connected with a coach, I am said to hear the coach. It is nevertheless evident that, in truth and strictness, nothing can be *heard* but *sound*; and the coach is not then properly perceived by sense, but suggested from experience.

That "nothing can be heard but sound" is of course an over-statement of some sort. We take sound to be the tautologous accusative of hearing, so that it would be self-contradictory to speak of hearing and to deny that what one hears is sound. Still, it would be very odd to say, in any ordinary context, that what I hear is sound or what I heard was sound; we may take it that "nothing can be heard but sound" is tautologically true but that no occasions arise for making this assertion. With one important exception. Namely, the occasion on which someone is instructing another about the usage of particular words. We can imagine a teacher trying to impress a child with the usage of "hear"-words; saying for instance, "You must not say you hear red, colours can't be heard, nothing can be heard but sound." But strictly the exception is not a genuine exception, since one

party to the exchange is supposed not to understand how to use the relevant expressions. Philosophical exchange, in fact the exchange between Hylas and Philonous, seems at times to reduce to such instructional talk. Were this always so, it would surely trivialize philosophy. But a second glance at Philonous' remark makes it clear that *he* at least does not see philosophy ending with a mere reminder of "what we would say". And though the possibility of making errors here is of crucial importance—of such importance that, in our own time, one may witness contests in accuracy between Oxonian and Oslonian enthusiasts—the issue is pre-philosophical (that is, we recognize questions raised by philosophers that are not reducible to the question, "What would we say?").

It would not be unusual, to pursue our analysis, for someone to say "I hear a sound", or "Sh! He hears a sound". But there is no tautology here; "a sound" is not the tautologous accusative of "hear". One would not speak in this way if one could specify the sound heard in certain other ways—as, say, the sound of a cat walking about. Again, it would be very odd to insist that "nothing can be heard but sound" if someone had said "I heard an argument next door" or "I heard his speech last night". There would not be any clear sense in insisting on this admitted truth; in fact, insisting on it in the context would surely be misleading—as much as to say that someone must have been blundering in some way in saying "I heard his speech last night". What would be puzzling about the exchange is due simply to the fact that "I heard his speech last night" conveys information about some contingent event in a recognizably acceptable way and that "Nothing can be heard but sound" does not provide any such information but instructs us about a certain restriction binding upon our use of words. The puzzlement arises then because the first remark cannot be supposed to have involved a misuse of language and the second appears pertinent only when one is instructing another about the usage of expressions (including correcting another's usage).

But another glance at Philonous' comment will persuade us that he views "nothing can be heard but sound" as a perceptual discovery and not as a rule of usage. Hence he concludes that, though "I am said to hear the coach, . . . in truth and strictness . . . the coach is not . . . properly perceived by sense, but suggested from experience". So he grants that there is nothing irregular about *saying* "I hear the coach", but the nature of hearing is

such that I could not actually *hear* the coach but only, say, *infer* the coach from the sounds I do hear. Now Philonous' remark bears directly on disputes concerning the inferential character of certain apparently perceptual statements. I may, surely, hear "a coach-driving-along-the-streets sound" without there being a coach driving along the streets; and I may say "I hear a coach driving along the streets" without implying "There is a coach driving along the streets". I may in short be merely *identifying* a sound, I may *recognise* it (or think I do) to be a sound of a certain kind, namely, a coach-driving-along-the-streets sound. And in stating "I hear a coach driving along the streets" in this sense, I am not inferring anything about the sound or about anything else; I am merely stating what I have recognized. Some may be inclined to think that perceptual statements are incorrigible if they are not inferential, and thus, wishing to deny incorrigibility—quite rightly—they may insist that perceptual statements are all inferential—quite wrongly. We may surely mistake a coach-driving-along-the-streets sound for another.

When I say, therefore, "There is a coach driving along the streets", and in answer to your question, "What makes you think so?" say "I hear it", I am making an inference about a coach from a sound that I hear. But I am not making an inference about the sound and could not under the circumstances. I recognize the sound to be a coach-driving-along-the-streets sound (though I may be mistaken) and infer that there is in fact a coach driving along the streets. Philonous would be quite right in viewing "There is a coach driving along the streets" as an inference from a coach-driving-along-the-streets sound. But he would probably be wrong in viewing "That is a coach-driving-along-the-streets sound" as an inference from what we hear. However, a conceivable context could be supplied even for this. If I have never been introduced to coach-driving-along-the-streets sounds, I may have to infer that a particular sound I hear is just such a sound (from other qualities of the sound *that I recognise* and other general information that I deem relevant; for example, that you have just told me that at times coaches do drive along the streets outside your window). But if I have already been introduced to such sounds, I should not be *inferring* that a sound I hear is a coach-driving-along-the-streets sound, I should merely be *identifying* it (though I may do so mistakenly). And even if such sounds should be highly variable, so that my assertion that a given sound is a coach-driving-along-the-streets

sound depends on noting a sufficient resemblance, my assertion would still not have to be inferential.

If we are testing someone's hearing, our subject might say, in order to indicate *how well he hears*, "Now I hear something, now I hear a sound". But, ordinarily, if someone were to say "I hear something", we should expect him to identify *what kind of a sound* it is he hears. We should be baffled if he added rather pointedly, "I hear a *sound*"—as if to say the "something" heard is a sound and not another kind of thing, as if to say he had given us further information about the contingent event, his hearing something.

Two crucial points hold the key, I believe, to the issues raised. The first is that inference has to do only with the logical dependence of one statement upon another and not at all to do with psychological considerations of hesitation in pronouncing any statement, the quickness with which we may move from one statement to another, or the freedom with which we may elide statements related inferentially. It is very unlikely, thus, that I should say "I hear a coach-driving-along-the-streets sound. Therefore, there must be a coach driving along the streets." No. I hear the sound and at once state that there is a coach driving along the streets. But if it is the case *that I can hear only sound* (and does anyone dispute this?), then *I must be inferring* that there is a coach driving along the streets from the sound I hear. Those who repudiate or ridicule the view that I am making an inference here are surely trading (indefensibly) on the impressive psychological aspects of hearing and speaking. What requires indeed to be studied further is the psychology of inference. But in the present context, it is sufficient to notice that the inferred statement and the non-inferred premiss both are capable, logically, of being in error. To treat the relationship between our two statements as inferential does not, by itself, strengthen or weaken the logical or psychological certainty of either.

The second point is this. It has been regularly observed that "see"-words do not have a tautologous accusative as do "hear"-words. "Visible" will hardly do; for, like "tactile", it merely obliges us to enumerate the kinds of things that could be appropriate accusatives. Furthermore, such accusatives as "hue" and "shape" may be said to be seen separately, without misusing language; therefore, to say "I see a colour" is, in contrast to "I hear a sound", to provide information about what I see (and not merely about the fact that I am seeing some-

thing). The use of "hear"-words and the use of "see"-words are substantially different from one another.

Specifically, *we can and do restrict the use of "hear"-words to the model "nothing can be heard but sound" but we cannot do anything like this for "see"-words* (parallels hold of course for taste, smell, and touch—the first two have their tautologous accusatives, the last does not). If, therefore, "I hear a coach driving along the streets" may, in suitable circumstances, be taken to be non-inferential and also taken to say, in part, "There is a coach driving along the streets", I should claim here only that the meaning of "hear" has changed from that with which we began (this second way of using "hear" cannot take a tautologous accusative). Although it is perfectly admissible to say that "I see a coach driving along the streets" is not an inference but merely an identification of what I see; yet "I hear a coach driving along the streets" (taken in the same sense) cannot be non-inferential without changing the sense of "hear" from that which we have been treating as primary. There is no single, elementary sense of "see" open to the kind of control our primary sense of "hear" is open to. I am not denying that statements about physical objects may be perceptual statements ("I see a coach driving along the streets") and not always inferences from other sorts of statements (whatever these may be taken to be). But I cannot say "I hear a coach driving along the streets" (meaning, in part, "There is a coach driving along the streets"), and, in speaking thus, subscribe as well to the rule "Nothing can be heard but sound". Obviously not, since what I want to say in this last locution is not merely that I hear a coach-driving-along-the-streets sound (that is, without committing myself to there being a coach driving along the streets) but that I hear a coach driving along the streets (that is, committing myself to being mistaken about what I hear if there is no coach driving along the streets).

If it holds, the argument disqualifies the counter-move of arraying a spectrum of cases of the following sort: "I hear a coach driving along the streets", "What I hear seems to be a coach driving along the streets", "What I hear is a coach-driving-along-the-streets sound". The move is designed to get us to admit that we would be willing to express ourselves in these ways in specifiable circumstances. And of course we would be. But the admission does not alter the fact that the sense of "hears" has changed from the first to the last member of the series—that, with respect to the first, one cannot subscribe

to the rule "Nothing can be heard but sound"; and with respect to the last, the rule applies. It is the sense of "hears" that changes and not merely the objects said to be heard. Furthermore, the argument renders suspicious analogies drawn from the way in which we speak of seeing. Because we are all prepared to subscribe to the rule "Nothing can be heard but sound" and there is no comparable rule for the use of "see". We can and do restrict "hear" in a way in which we cannot restrict "see".

Consider again however "I hear a coach driving along the streets", taken in a way in which the statement would be false if there were no coach driving along the streets. Surely, this is the common way of speaking. But we have two possible models for the use of "hear" here, and both will provide for the statement's being falsifiable in the particular respect mentioned. We may view the statement as a compressed form of an inference "There is a coach driving along the streets" together with a non-inferred perceptual statement "I hear a coach-driving-along-the-streets sound" on which it depends. Or, we may view the statement non-inferentially as a perceptual statement, in which "hear" is not being used in such a way that the speaker could subscribe to the rule "Nothing is heard but sound". I do not know how it could be shown that we never use "hear" in this second way. Nor do I know how it could be shown that we ever use it in this way rather than in the first. In fact, I cannot see how such a second sense of "hear" could be employed independently of the first and I cannot see how such a sense could fail to be logically superfluous. But I do see a certain gain in philosophical simplicity, without any apparent loss of power, in speaking of only one sense of "hear"; and also a certain plausibility, in that we are prepared to subscribe to the rule "Nothing can be heard but sound".

University of California (Berkeley)

PROFESSOR HANSON IMAGINING THE IMPOSSIBLE

By Roy J. Cox

IN his paper¹ "Imagining the Impossible" Professor Hanson attempts to clarify the principle "if X is thinkable, then X is possible" by means of a distinction between two senses of "necessarily true". If I say "I am sitting here consciously

¹ ANALYSIS, March 1959.

writing these words" or "a perpetuum mobile is impossible", then these statements are necessarily true because no conceivable evidence could show me that they are false. The statement "no triangle is quadrilateral", however, cannot be false because the very statement of its falsity is internally inconsistent. This shows, according to Hanson, that although all may be said to be necessarily true and their negations inconceivable there is a fundamental difference such that anything which is inconceivable in one sense need not be inconceivable in the other. In the principle "if X is thinkable then X is possible" we have a logical slide from one to the other: although if X is thinkable it is not the case that X is inconceivable and if X is not inconceivable then X cannot be of the form $P \cdot \sim P$ and if X is not of the form $P \cdot \sim P$ then X is possible, yet these are different senses of "inconceivable" and cannot function in one argument to justify the principle. This of course does not do justice to Hanson's argument but I think the interesting point about it is not whether the principle is in fact justifiable or not—it seems extremely doubtful whether we use the words "thinkable", "conceivable" and "possible" in any very definite senses when they are not technically defined—what is interesting is his attempt to reserve internal inconsistency for the realm of logic and to push all statements relating to matters of fact, no matter how inconceivable they may be, into the category of the merely false. This is misleading and the distinction between two types of inconceivability obscures rather than clarifies the issues involved in the principle "if X is thinkable, then X is possible".

The statement "If I can imagine X then X is not logically impossible", according to Hanson, looks like a claim to infer a logical statement (concerning X's possibility) from a contingent one (concerning what we can or cannot imagine). This is because questions concerning logical possibility are questions about whether or not the statement is of the form $P \cdot \sim P$, and if it is, then it is necessarily so, whereas since it is in some sense contingent to say I can imagine X whereas you cannot, then it is contingent to say of everyone that they can or cannot imagine X. Put in this general form this seems straightforward, but in fact the position is not so simple. Although there is much to be said for regarding the statement "I can imagine a nuclear war but you cannot" as straightforwardly contingent, the statement "no one can imagine a nuclear war" is not plainly of the same status. We might explain the first in such terms as one person making a study of the subject and so being

able to imagine a nuclear war whereas another has not and cannot imagine one—we are pointing to a discrepancy in information and perhaps ability. But how might we explain the second? Is it simply a question of no one studying and so being able to imagine a war? If we can understand the first it is because "nuclear war" is part of our ordinary vocabulary, even if it is a vague part, and it *is* part of our vocabulary because most people have some idea of what a nuclear war would be like. But if someone says "No one can imagine a nuclear war" and we tried to contradict him by pointing to the general knowledge which enables the word to be part of our vocabulary, his reply to this might be that he was not maintaining that no one has the faintest idea what "nuclear war" means but that a nuclear war is not the sort of thing of which it makes sense to say people can imagine one. After a discussion about unpredictable factors and the limitations of our knowledge about radiation we may even come to agree that "unimaginable" is not too strong an adjective to apply to "nuclear war". But whichever way we decide it is plain that what is in question is the meaning of "nuclear war". A test case is involved and to ask whether the statement is true or not seems to be premature—the reasons for and against are such that there must be an element of decision involved.

This question of the interdependence of what is or is not said by everyone or no one and the meaning of the words concerned is something which is not raised by Hanson. In his discussion of the question "Is it part of what we mean by saying that X is logically impossible, that we cannot think it?" it seems that he considers the way we actually use words as a very different question from what they mean. He admits that if X is logically impossible we *cannot* form a mental picture of X, e.g. a quadrilateral triangle, but says the connection between X being impossible and X being unthinkable may only be an empirical one. But this need not be simply a case of there never having actually been an instance of anyone thinking the logically impossible; apparently we can say given our world and homo sapiens no one ever will, and yet it seems we must say the statement "I imagined the logically impossible" is just false just as the statement "M.I.T. built a perpetuum mobile to-day" is just false. We can even say we do not have the concepts "imagining the impossible" or "building a perpetuum mobile", "but", Hanson says, "this again is a statement of what kinds of concept we do in fact have, so we can *still* say 'M.I.T. built a perpetuum mobile to-day' may not be conceivably true but

it is not logically false". All this, however, is very strained. It seems as if concepts are things, objects we can "have", and our having them is a matter of empirical fact somehow independent of the use to which they are put. If "not having the concept 'imagining the impossible'" means we have no use for the concept in our language, then why suggest that it has a use by saying that "I imagined something which is logically impossible" is false? This seems to be just a strategy for making extremely dubious statements meaningful without the bother of saying how they can be meaningful. It apparently absolves Hanson from an inquiry into meaning which, although it may not immediately reveal a form of $P \sim P$ will nonetheless undermine internal consistency. It is this lack of interest in the meaning of his "not conceivably true" statements which enables him to overlook the difficulties involved in regarding his distinction between the two senses of "inconceivable" as being clear cut.

But let us look more closely at some of these statements. Hanson suggests that the statement "I am now sitting here writing these words" is necessarily true and yet empirical. It is necessary because no present conceivable evidence could shake my belief that I am sitting here writing; and empirical, presumably, because it is about a particular person and a particular event. If I had any reason to doubt this then I must doubt any other empirical statement, so that for me it cannot be false that I am now sitting here consciously writing these words. We may agree that "I" in some sense must be sitting here, but Hanson does not seem to regard it as important that the meaning of "I" is problematical. It seems plain, however, that we can think of ourselves not only as the subject of present experiences as we do when we say "I feel pain", but as an enduring physical object as well. For the most part there is no call to make any such distinction; but here Hanson is imagining a situation where we must make just this distinction, yet he fails to do so and uses the word "I" in the subject sense for the purpose of establishing necessity whilst at the same time using it in the object sense to make his statement factual. If we keep this distinction clearly in mind, however, when considering the question of my doubting whether I am sitting here writing, it seems plain that the memory of having taken drugs¹ may give me reason for thinking that these sensations of writing are not veridical. I as an object may be in bed perceptually unconscious—perceptually because if I am

¹ It does not seem far-fetched to imagine drugs or perhaps local stimulation of the cortex which can affect sensations but not memory.

truly thinking about something then in some sense I must be conscious. (This is a little strange but *prima facie* it seems arbitrary to rule that no matter how coherent my thinking and memory may be I cannot be conscious unless some present sensations are veridical.) This opposition of criteria which are not usually opposed, however, may suggest the introduction of a new term. But the important point is that, although my memory may be at fault and there would be no way for me to see if it were, short of waiting, there is no reason why it must be. Hanson finds all this impossible because he has things both ways. He says "My ability *here and now* to entertain evidence for other propositions (one way or the other) depends on my present inability to entertain evidence against my being now conscious sitting here at this table writing these words" (my italics). By stipulating the "here and now" Hanson appears to be endorsing the present sensations as sensations of existent objects in real—as opposed to hallucinatory—time. If these are real objects then my body which is writing is one of them and is real too. The "I" subject, however, is not *here at this time*, it is merely having these experiences, and as such this "I" can think that the "I" body is perceptually unconscious in bed. It seems then that when Hanson says "It cannot, for me, be false that I am now sitting here consciously writing these words" he cannot be thinking of the "I" as an object (unless perhaps he wants his use of "here and now" to indicate that the criterion for the existence of physical objects is the coherence of present sensations). But if he is thinking of the "I" merely as the subject of experiences, his statement cannot be false but his way of expressing himself conceals the peculiar nature of such an incorrigible utterance. He should have said "It cannot for me be false that I am having these table-and-writing sensations". But it has often been pointed out that this sort of incorrigibility can only be had at the cost of reducing the information value to nil, even to oneself. Such utterances are not very intelligible; but it seems that if we were to ask what is meant by the "I", the answer would be in terms of whoever is experiencing these sensations and not in terms of the more usual criteria of identity. Thus it would appear that when I say "It cannot for me be false that I am having these sensations", I am saying that it cannot be false that whoever is having these sensations is having these sensations, and to say that this *is* false *is* to say something which is of the form (P. ~P).

But the first person idiom is a difficult subject to discuss

briefly and Hanson says it is not essential to the argument, since such statements as "A perpetuum mobile is impossible" or "Nothing has a velocity greater than that of light" also express what is not conceivably false yet not tautologically true. But although he sees that there is something unintelligible about these statements he puts this in a negative way. He suggests that we should have to await the construction of a notational and conceptual framework *ab initio* before they become intelligible. But what is it that is at present unintelligible? To say what a "perpetuum mobile" is, using our present framework, is simply to show the need to give up this framework. If we did construct one to explain how something could have a velocity greater than light, "velocity" in the new framework would not mean velocity. Hanson seems to be admitting that the word "velocity" is theory-laden in his talk of new frameworks but denying this in saying that the lack of a velocity greater than light may be just a contingent matter. Perhaps some of the confusion here is due to the fact that it is easier to use inappropriate models in talking of "speeds greater than that of light" and "perpetuum mobile" than it is when talking of "quadrilateral triangles". We can think of a clock-like piece of machinery which just does not stop, or of discovering a particle like any other except that it travels a lot faster. It is only when we try to imagine in what ways this can be a machine and yet frictionless, or how this particle will still be a particle, to be classified with the slower ones, when it exceeds the speed of light, that we begin to see that we have to give up our usual ways of thinking in a fashion not so dissimilar from the way we have to give up certain concepts if we want to think of "quadrilateral triangles". This is not to argue that there are no differences here. It is plain that our use of the word "machine" and even "velocity" is not bounded as rigorously as the words "triangle" and "quadrilateral" are. In everyday contexts the difference in clarity is marked, but when we use "velocity" and "machine" in the context of a scientific discussion, which is Hanson's context, we must take into consideration the more rigorous implications involved and in so far as we do this what is inconceivably true becomes less and less comprehensible.

It seems then that Hanson's tools for dealing with the issues involved in the principle "if X is thinkable then X is possible" are much too heavy. The old dichotomy between logically impossible and empirically impossible serves well enough as long as it is not used to clarify distinctions which can only be

clear in terms of the details of a particular situation or theory. This principle is by no means clear as it stands and it seems reasonable to suspect that anyone seriously putting it forward might back it up with arguments directed against just this dichotomy which is the basis of Hanson's criticism. The purpose of this note, however, was not to justify the principle but only to question the value of reserving the concept of consistency for formal logic.

University of Cambridge

ON MR. SØRENSEN'S ANALYSIS OF "TO BE" AND "TO BE TRUE"

By YEHOShUA BAR-HILLEL

§1. MR. SØRENSEN'S recent paper¹ carries the subtitle "A Linguist's Approach to the Problem", presumably with the intention of indicating that the paper was not only written by a linguist but also by someone *qua* linguist. I was greatly intrigued by this subtitle, but the greater was my disappointment when it turned out that Sørensen's paper was just a regular philosophical one, containing absolutely nothing which bore out the implied promise.

I have no objection to Sørensen's conclusion (which I put however in my own words) that the statement usually made by an utterance of a sentence of the form "A is" is identical with the statement usually made by an utterance of the sentence of the form "'A' denotes" (though I still hope a linguist will give us some time an exhaustive description of the situations in which such odd sentences are likely to be uttered). Neither do I object to the equivalence (in this sense) of "It is true that p" and "S denotes p and p" (where 'S' is a name of 'p') or to the equivalence of "S is true" and "There is a p such that S denotes p and p."

But I do object to almost everything else Sørensen says in his paper. Most of it is literally wrong and non-literally misleading.

§2. Sørensen claims to have shown in his article the following three points:

1. "To be" and "to be true" are *relation* signs, i.e., whenever we say that something A is or is true, we say that

¹ "An analysis of 'to be' and 'to be true'", ANALYSIS 19.6 (June 1959).

a relation R holds between A and something else B, R being the relation that is expressed by "is" or "is true".

2. The relations that are expressed by "to be" and "to be true" are the fundamental relations between (linguistic) *signs* and what signs are signs for. (The sign "Churchill" is a sign for (the person) Churchill.)

3. The relations expressed by "to be" and "to be true" are one and the same relation; "to be" and "to be true" are, in effect, one and the same sign.

None of these claims makes literal sense. It seems that Sørensen believes that they follow from what I called above "Sørensen's conclusions". However, he arrives at this belief by a series of prejudices, misunderstandings and blunders.

§3. At the beginning of his §5, Sørensen says: "I said above: The statement 'A does not exist' implies the statement 'A exists—as the subject of discourse'. If there were no subject of discourse, there would be no discourse. Since we do speak about something when we say 'Anderson does not exist', there must be a subject of discourse". The belief that whenever one makes a statement, one has to speak about something, in the sense of some thing—because otherwise "there would be no discourse"—is rather popular but not quite as harmless as it might look. I know of no justification for it. It seems, in addition, that Sørensen jumps from one meaning of "subject", i.e., *topic*, for which the prejudice is at least plausible, to another, namely *subject term* (of a subject-predicate-type sentence). However, even he who would like—for whatever reasons—to stipulate that every statement must have a subject, *qua* topic, would not be obliged at all to conclude, as Sørensen does, that the subject of the sentence "Anderson does not exist" must be a linguistic entity since it cannot be the non-linguistic entity Anderson; he could claim that the subject is the non-linguistic entity Anderson's existence. (What is predicated of this subject? Nothing. It is a subject *qua* topic and you don't have to predicate anything of a topic in order to make a statement.) Whatever reasons one may have for regarding locutions of the form "A exists" as quasi-ontological¹ or pseudo-objects²—and I think that both Ryle and Carnap had given, directly or indirectly, good reasons for these conceptions, though Sørensen gives no indication of knowing them—none of these reasons gives the slightest support to Sørensen's formulations. Berkeley's and

¹ See G. Ryle, "Systematically Misleading Expressions", *Logic and Language*, First Series, ed. A. G. N. Flew, pp. 15 ff.

² See R. Carnap, *The Logical Syntax of Language*, pp. 285 ff.

Quine's *To be . . .* slogans are literally somewhat misleading—as are presumably all slogans—and may be wrong in their intention; Sørensen's slogan *To be is to denote* (p. 127) is only outrageous.

§4. In his §6, Sørensen writes: "It follows that it [what is expressed by "exist"] is a relational property, or simply: a relation." Not that Sørensen had really established that "exist" expresses a relational property. But this identification of a relational property with a relation is very strange. The consequences are, as one might expect, disastrous.

§5. Russell may well have failed to clear up millennia of muddle-headedness about "existence", as he claimed to do with his theory of descriptions. But surely not for the "simple reason" Sørensen gives in his §10. Russell does not retain *exist* as a predicate of non-linguistic entities—notice another jump in Sørensen's argumentation from *predicate qua* grammatical term to *predicate qua* name of a property—and "there is no entity *c*", which leads off Russell's well-known rephrasal of "The golden mountain does not exist" as "there is no entity *c* such that "*x* is golden and mountainous" is true when *x* is *c*, but not otherwise", does not mean at all the same as "an entity *c* does not exist"; except in the rather trivial sense that neither of these phrases means anything, though for different reasons, the second phrase because '*c*' is a variable, the first phrase because "there is no entity *c*" is not a categorematic expression at all but only a non-autonomous part of "there is no entity *c* such that" which is still not categorematic. (All this has of course been said many times before.)

§6. In his §12, Sørensen first claims that when one makes a statement that "Churchill smokes cigars" is true, one does not make a grammatical statement. This is doubtless true. He then goes on to say that this statement is not semantic either, "for it is not a statement concerning the meaning of "Churchill smokes cigars". On the contrary, it is a statement which presupposes that we know the meaning of "Churchill smokes cigars". We could not verify the statement unless we knew the meaning of "Churchill smokes cigars".

This is a strange argument. Why should a statement which presupposes that we know the meaning of "Churchill smokes cigars" not be a statement concerning this meaning? (There are some reminiscences of the standard refutation of the verification theory of meaning in what Sørensen says. But it is difficult to reconstruct his train of thought.)

After having "shown", on the basis of this and similar arguments, that "is true" expresses a *relational property*, Sørensen repeats the transition to the claim that "is true" expresses a *relation*. Well. (All this has, of course, nothing to do with the well-known proposal to use, in some appropriate language system, the term 'is-true-in' as expressing a relation between a sentence and the language.)

§7. Confusions pile up in §13. This section starts off: "I have now shown that "to be" (= "to exist") is a synonym¹ of "to denote", and I have shown that "to be true" is a synonym¹ of "to denote". I have thus shown that "to be" and "to be true" are one and the same sign", with the footnote: "¹ With the qualification, that substitution of "denotes" for "exists" in "A exists" entails substitution of "A" for "A" (and similarly for "is true")." What Sørensen had "shown" before was that "to be" and "to denote" were *partial synonyms*, in the sense that "denotes" in certain contexts is replaceable, *salva veritate*, by "is"—of course, Sørensen could not have possibly shown this at all, as is clear from his own quoted footnote which he refuses, for some reason, to take seriously—and that "to be true" and "to denote" are partial synonyms in the sense that "denotes" in certain contexts, but different from the previous ones, is replaceable, *salva veritate*, by "is true". Since partial synonymy is clearly not transitive, it does not follow from the premises that "to be" and "to be true" are partial synonyms, still less that they are synonyms, still less that they are one and the same sign, in any ordinary sense of the term 'sign'. However, Sørensen subscribes to the odd (*pace* C. I. Lewis) conception according to which a sign is a combination of a designator (a sign, in ordinary terminology) and a meaning. It is possible that Sørensen intends to imply, though he nowhere says that much, that two signs are the same if their second components are the same, i.e., if their first components are synonymous. This is not only a noteworthy deviation from the expected, since ordered couples are, in general, regarded as identical only if both their first and second components are identical, respectively, but would cause the whole conception to become a purposeless complication.

§8. In spite of Sørensen's paper I continue to cherish the belief that linguists could positively contribute to the explication of philosophically important locutions such as "to be" and "to be true".

Hebrew University, Jerusalem

lar
en
a
he
ge
a

"I
n¹
a
"

e:
or
"
"

s,
e,
ve
ed

in
m
".

ot
re
at
m
I.

n
g.
re

i-
r-
i-

s
e
o

e
n
d